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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
10/677,436	10/02/2003	Lifeng Zhang	A01449	9011
21898 ROHM AND	7590 11/28/2007 HAAS COMPANY		EXAMINER	
PATENT DEPARTMENT			ISSAC, ROY P	
100 INDEPENDENCE MALL WEST PHILADELPHIA, PA 19106-2399		ART UNIT	PAPER NUMBER	
			1623	
			MAIL DATE	DELIVERY MODE
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			11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)				
	10/677,436	ZHANG, LIFENG				
Office Action Summary	Examiner	Art Unit				
	Roy P. Issac	1623				
The MAILING DATE of this communication app	ears on the cover sheet with the	correspondence address				
Period for Reply	/ IC OFT TO EVEIDE AMONTU	(20) OD THIDTY (20) DAYO				
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING DA - Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period w - Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATIO 36(a). In no event, however, may a reply be ti vill apply and will expire SIX (6) MONTHS fron , cause the application to become ABANDON	N. mely filed n the mailing date of this communication. ED (35 U.S.C. § 133).				
Status		·				
1) Responsive to communication(s) filed on 06 Se	eptember 2007.	•				
2a) This action is FINAL . 2b) ⊠ This	This action is FINAL . 2b)⊠ This action is non-final.					
	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
closed in accordance with the practice under E	x parte Quayle, 1935 C.D. 11, 4	.53 O.G. 213.				
Disposition of Claims						
4)⊠ Claim(s) <u>1,2,4 and 6-24</u> is/are pending in the application.						
4a) Of the above claim(s) <u>4 and 6-9</u> is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1,2 and 10-24</u> is/are rejected.	•					
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/or	r election requirement.	·				
Application Papers						
9)☐ The specification is objected to by the Examine	r.					
10) The drawing(s) filed on is/are: a) acce	epted or b) objected to by the	Examiner.				
Applicant may not request that any objection to the	drawing(s) be held in abeyance. Se	ee 37 CFR 1.85(a).				
Replacement drawing sheet(s) including the correct						
11)☐ The oath or declaration is objected to by the Ex	aminer. Note the attached Office	e Action or form PTO-152.				
Priority under 35 U.S.C. § 119						
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of:	priority under 35 U.S.C. § 119(a	a)-(d) or (f).				
1. Certified copies of the priority documents have been received.						
2. Certified copies of the priority documents have been received in Application No						
3. Copies of the certified copies of the prior		ed in this National Stage				
application from the International Bureau						
* See the attached detailed Office action for a list of the certified copies not received.						
Attachment(s)						
 Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) 	4) Interview Summan Paper No(s)/Mail D					
3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date	5) Notice of Informal I					

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Detailed Action

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/06/07 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2 and 10-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et. al. (ACS Symposium Series, 765, 2000, 254-270; Of record) in view of Anderson et. al. (Polymeric Materials Science and Engineering, 79, 1998, 411-412; Of record) further in view of Emmons et. al. (U.S. Patent No. 4079028; PTO-1449).

Ma et. al. discloses complexations of beta-cyclodextrin with hydrophobically modified ethoxylated urethanes (HEUR). (Abstract). Ma et. al.

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discloses the use of diisocyanate groups. (Page 261, Paragraph 2-3). Ma et. al teaches that stronger interaction between beta-cyclodextrin and thickeners is seen as the terminal hydrophobe size increases. HEURs are reported to displace phenolphthalein from cyclodextrin cavity. (Page 262, Paragraph 1). The recitation, "for a reduced viscosity hydrophobic thickener system for thickening a polymer-containing aqueous system" is considered an intended use of the composition. Note that it is well settled that "intended use" of a composition or product, e.g., "topical skin care composition", will not further limit claims drawn to a composition or product, so long as the prior art discloses the same composition comprising the same ingredients in an effective amount, as the instantly claimed. See, e.g., Ex parte Masham, 2 USPQ2d 1647 (1987) and In re Hack 114, USPQ 161. The recitations "wherein at least a portion of said cyclodectrin-containing compound is complexed with said hydrophobically modified associative thickner in such a ways that at least a portion of at least one said phobes at least partially fills said hydrophobic cavity" is considered a functional recitation of an inherent property of the composition. The compositions of Ma are expected to have the same properties because it consists of compounds recited in claims herein.

Ma et. al. does not expressly disclose a hydrophobically modified polyethoxylated urethane thickener comprising a one branched chain or straight chained diioscyanate functional group.

Anderson et. al. discloses that hexane diisocyanate HEURs are also considered thickeners. (Page 411, Column 2, Paragraph 3). Anderson teaches

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that the use of hexane diisocyanate results in cleaner products and enhances the removal of urea. (Abstract).

Emmons et. al. discloses the use of a variety of diisocyanate compounds for the preparation of hydrophobically modified polymers. (Column 8, lines 45-68). The diisocyanate compounds disclosed include several of the compounds listed in claim 1, including 1,4 tetramethylene diisocyanate and hexamethylene diisocyanate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a hexane diisocyanate HEUR instead of a cyclohexane HEUR since the hexane HEUR was also recognized in the art as a thickener. One of ordinary skill in the art would have been motivated to use HEURs made with hexane diisocyante because they were disclosed to have thickener properties and results in cleaner products. Therefore, one of ordinary skill in the art would have reasonably expected that the use of branched or straight chain HEURs would have resulted in substantially similar or better effects. Furthermore, choosing a thickener also known in the prior art with a hydrophobic end moiety to complex with cyclodextrin as claimed herein would have been within the routine skills of one of ordinary skill in the art. Herein, all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. The substitution of one element for another, for example one of the well known

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diisocyante compounds, would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Thus the claimed invention as a whole is clearly prima facie obvious over the combined teachings of the prior art.

Response to Arguments

Applicant's arguments filed 9/06/07 have been fully considered but they are not persuasive. Applicants argue that as amended Anderson does not disclose any of the newly recited diisocyanates. However, Anderson discloses the use of hexane diisocyanate which is considered the same compound as the claimed 1,6-hexamethylene diisocyanate claimed herein. Furthermore, a series of diisocyanates are well known in the industry for attaching hydrophobic modifiers to polymers as disclosed in Emmons et. al. The rejection under section 103 is still deemed proper and is adhered to.

Claims 1-2 and 10-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisenhart et. al. (U.S. Patent No. 5,137,571; Of Record), in view of Anderson et. al. (Polymeric Materials Science and Engineering, 79, 1998, 411-412; Of record) further in view of Emmons et. al. (U.S. Patent No. 4079028; PTO-1449).

Eisenhart discloses a method for improving thickeners by complexation of cyclodextrin with hydrophobic moieties on the thickener molecule. Eisenhart discloses 0.5 to about 2% cyclodextrin. (Column 4, line 68). Eisenhart discloses

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solid content of 3% (Example 1; Column 7, lines 5-32), 8% solids (Example 5; Column 9, lines 28-31), and Acrysol RM-5 that contains 30% solids. (Table 18, Column 15, lines 5-10). Eisenhart discloses the use of polyethoxylated urethanes, and hydrophobically modified polyacrylamides. (Column 15, lines 40-50). The QR-708 thickner used in example 1 appears to be an ethoxylated polyurethane thickner. It is within the basic skills of one of ordinary skill in the art to vary the solid contents in the composition.

Eisenhart et. al. does not expressly disclose a hydrophobically modified polyethoxylated urethane thickener comprising a one branched chain or straight chained diioscyanate functional group.

Anderson et. al. discloses that hexane diisocyanate HEURs are also considered thickeners. (Page 411, Column 2, Paragraph 3). Anderson teaches that the use of hexane diisocyanate results in cleaner products and enhances the removal of urea. (Abstract).

Emmons et. al. discloses the use of a variety of diisocyanate compounds for the preparation of hydrophobically modified polymers. (Column 8, lines 45-68). The diisocyanate compounds disclosed include several of the compounds listed in claim 1, including 1,4 tetramethylene diisocyanate and hexamethylene diisocyanate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a hexane diisocyanate HEUR instead of a cyclohexane HEUR since the hexane HEUR was also recognized in the art as a thickener. One of ordinary skill in the art would have been motivated to use

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HEURs made with hexane diisocyante because they were disclosed to have thickener properties and results in cleaner products. Therefore, one of ordinary skill in the art would have reasonably expected that the use of branched or straight chain HEURs would have resulted in substantially similar or better effects. Furthermore, choosing a thickener also known in the prior art with a hydrophobic end moiety to complex with cyclodextrin as claimed herein would have been within the routine skills of one of ordinary skill in the art. Herein, all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. The substitution of one element for another, for example one of the well known diisocyante compounds, would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Thus the claimed invention as a whole is clearly prima facie obvious over the combined teachings of the prior art.

Response to Arguments

Applicant's arguments filed 9/06/07 have been fully considered but they are not persuasive. Applicants argue that as amended Anderson does not disclose any of the newly recited diisocyanates. However, Anderson discloses the use of hexane diisocyanate which is considered the same compound as the claimed 1,6-hexamethylene diisocyanate claimed herein. Furthermore, a series

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of diisocyanates are well known in the industry for attaching hydrophobic modifiers to polymers as disclosed in Emmons et. al. Applicants further argue that the only hydrophobically modified urethane thickener disclosed in Eisenhart, QR-708 is a baed on H12MDI which is not one of the diisocyantes listed in amended claim 1. However, the diisocyantes recited in claim 1 were well known to one of ordinary skill in the art at the time of the invention and exchanging one diisocyante moiety with another would have been well within the basic skill of one of ordinary skill in the art. As discussed above, both Anderson and Emmons disclose diisocyanate compounds of claim 1. Applicants further argue that none of the references cited comprise a hydrophobically modified aminoplast-ether copolymer. The polymers of Ma et. al. and Anderson et. al. are considered aminoplast-ether copolymers since they contain both aminoplast and ether groups. Note that aminoplast refers to a broad category of compounds. For example, Chan et. al. teaches that aminoplast refers to "plastic made from amino compounds". (Chan et. al., Scientia Horticulture, 114, 2007, 112-120: PTO-892). Furthermore, Ma discloses urea structure attached to polyethylene glycol which is considered a aminoplast-ether group. The rejection under section 103 is still deemed proper and is adhered to.

No Claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy P. Issac whose telephone number is 571-272-2674. The examiner can normally be reached on 9:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Roy P. Issac Patent Examiner Art Unit 1623 Leigh C. Maier Primary Examiner Art Unit 1623

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